DETAILED ACTION

Claims 43-54 and 56-77 are pending as amended 12/23/09 in the RCE of 6/9/09, of which 56-71 and 73 are withdrawn from consideration as non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 43-54, 72 and 74-77 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 43:

(1) The six solenoid valves and the back-pressure regulator are not structurally linked to the claimed device or apparatus.

(2) The parts listed in the claim are not structurally linked to the device.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 43-54, 72 and 74-77 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The structural relationship between the six solenoid valves and the rest of the device critical or essential to the practice of the

invention but not included in the claim(s), is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The disclosure as originally filed does not have any details of how the solenoid valves are structurally linked to the device or apparatus, and therefore, would take undue experimentation on the part of a skilled artisan to figure out how the six valves are interlinked. The amended claims and applicant's arguments stress the importance of the six solenoid valves for patentability over the cited prior arts. Since such structure is not recited in the claim and not disclosed in the specification, the claims are not enabling for the claimed scope of the invention.

Arguments presented, traversing this rejection, are not persuasive because applicant's invention appears to be in the structural relation ship between the six solenoid valves, and the valves are not properly linked in the cited paragraphs.

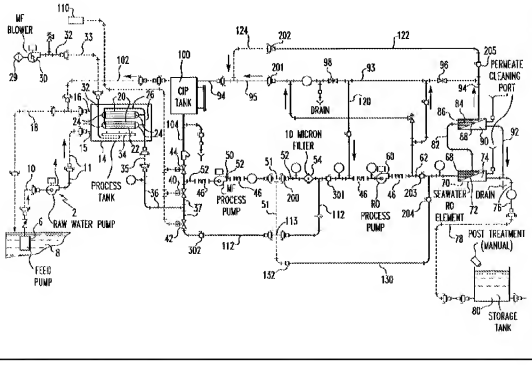
Any reference to figure 7 in the arguments cannot be considered because **Fig. 7 was objected to as new matter in the non-final action of 3/19/08, which was then deleted by amendment by the applicant on 9/19/08**. Without Fig 7, the cited portions of the specification do not provide any detail of the way the six solenoid valves are arranged.

Claim Rejections - 35 USC § 103

1. Claims 43-54,72 and 74-77 are rejected under 35 U.S.C. 103(a) as unpatentable over Daly et al (US 6,120,688).

Daly teaches a reverse osmosis system with prefilter (20), reverse osmosis membranes (70,84), process tank, pumps, several solenoid valves, recirculation of the retentate water (through lines 93-93-120), back pressure regulator (see drain line or the recirculation line to the CIP tank: reverse osmosis systems require a back-pressure regulator to maintain the high pressure over the membrane for the separation to happen, and it is implied in the system if not explicitly stated). See the figure reproduced below.

The limitations of "for concentrating aqueous solutions", or any reference to the herbal concentrate are only intended use, and are not patentable limitations in an apparatus claim.



Claims 74-77: being portable, arranged within a housing, special arrangement of the valves air-bleed (or vent) valves, etc are well known, and within the capability of one of ordinary skill in the art to design. These limitations are not patentable.

The membrane module recited in the claims may not be identical to the membrane module used in the Daly reference, but the membrane is the same or similar – thin film composite- as claimed. Moreover, the thin film composite membrane has been commercially available from Film-Tec for many years now, and is not a patentable invention. The described membrane modules are also commercially available.

Arguments presented traversing this rejection are not persuasive: the claims are for an apparatus, and the apparatus is capable of performing the intended use. Concentration of the extracts is an intended use, which is not a patentable limitation. Arguments about speedy recovery and degradation of bioactive molecules, etc are not commensurate in scope with the claims. Provision of solenoid valves to control flow is well known in the art, and is not patentable. The reference teaches several solenoid valves for such flow controls. Applicant has not provided any evidence of patentability over this prior art with respect to the structural arrangement of the "six solenoid valves" and how that structural arrangement enhances patentability over the reference.

2. Claims 43-54, 72 and 74-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-201872 or Lawhon et al (US 4,643,902) with evidence from Gobel et al (US 4,491,600) and/or Dorai et al (US 5,434,315)

Claims 43-55 and 72 recite a reverse osmosis system with a thin film composite membrane module, a prefilter, associated pumps and piping, valves, control valves and instrumentation to run the system; with the recycle of the concentrate from the membrane to the extract solution container. The system is intended for use in concentrating herbal extracts.

JP teaches a system for concentrating herbal extracts using reverse osmosis membranes, with prefilter and associated pumps, valves, etc. JP teaches using reverse osmosis for concentrating the extract especially for extracts which have volatile components. Types of membranes including TFC are also taught. See pages 5 and 6 of the reference (of the English machine-translation). It is unclear if the reference specifically teaches recirculating the extract through the reverse osmosis system. However, the reference clearly states at several places that the reverse osmosis concentration is well known.

Lawhon teaches using ultrafiltration and reverse osmosis membranes for concentrating various fruit and vegetable extracts as claimed in figures 1-3. The pre-filtration step to remove suspended matter is see in column 4 lines 5-10. The ultrafiltration step provides UF concentrate, and permeate; the permeate containing flavor and aroma components, which is concentrated by reverse osmosis, and the reverse osmosis permeate being just solvent (or water) being discarded. Additional equipment such as tanks, solenoid valves, power supply, control panels, regulators, rubber O-ring seals, etc., are inherent in the teaching of the reference. The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the

rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983). The membranes taught are hollow fiber and tubular (for RO: examples). Spiral wound membranes are also tubular. Moreover, the specific membrane structure such as spiral, hollow fiber, or plate type are considered equivalents, as evidenced by the Gobel reference, column 3 lines 55-60 and column 4 lines 5-21.

Lawhon also does not specifically teach recirculating the concentrate for further concentration. Gobel teaches that recirculation can be done if desired (column 4 lines 60-68, and column 5, lines 32-49). Dorai teaches making multiple passes of the polymer liquids through a separation membrane (20), that is recirculating, to concentrate. Daly also teaches retentate recirculation (see rejection paragraph 1 above). Thus recirculating solutions through the membrane system is also well known. **It would also be obvious to one of ordinary skill in the art at the time of invention to recirculate a stream if one pass is insufficient to obtain the desired concentration; and also for a batch operation.**

The systems taught by the references are particularly effective in concentrating herbal extracts, functioning at room temperature, without frothing, enabling removal suspended mater, valves changing to help, enables adequate pressure, on-off switch helps, control functions, etc., are functional language and are not patentable limitations.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). Ability to scale up is not patentable. Dimensional details of the membrane etc., are not patentable limitations: In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.). The membrane used by the applicant are also

known in the prior art, as admitted by the applicant in the specification, and therefore has no patentable weight.

Claims 74-77: being portable, arranged within a housing, special arrangement of the valves air-bleed (or vent) valves, etc are well known, and within the capability of one of ordinary skill in the art to design. These limitations are not patentable.

Arguments presented traversing this rejection are not persuasive: arguments are directed at the intended use and operation steps, but the claims are for the apparatus, and the apparatus taught by the combination of these references are capable of performing the function recited. Arguments are also directed at separately attacking the references, without giving complete consideration of the rejection.

Response to Arguments

Applicant's arguments filed 9/19/08 have been fully considered but they are not persuasive.

They are addressed in the rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Krishnan S Menon/
Primary Examiner, Art Unit 1797